

Amendments to the Specification

Please replace the paragraph beginning at page 1, line 29 which begins with "According to an exemplary..." with the following amended paragraph:

According to an exemplary embodiment of the present invention ~~as set forth in claim 1,~~ the above object may be solved by a method of artifact correction in a data set of an object of interest, wherein an image of the object of interest is reconstructed on the basis of the data set and wherein a statistical weighing is performed during reconstruction of the image.

SPW  
3/2/9  
Please replace the paragraph beginning at page 2, line <sup>7</sup>~~8~~ which begins with "According to another exemplary..." with the following amended paragraph:

According to another exemplary embodiment of the present invention ~~as set forth in claim 2,~~ the data set is a projection data set acquired by means of a source of electromagnetic radiation generating a beam and by means of a radiation detector detecting the beam.

3/2/9 SPW  
Please replace the paragraph beginning at page 2, line <sup>14</sup>~~15~~ which begins with "Another exemplary embodiment..." with the following amended paragraph:

In another ~~Another~~ exemplary embodiment of the present invention, ~~is set forth in claim 3, wherein~~ the source of electromagnetic radiation is a polychromatic x-ray source. Furthermore, according to an aspect of this exemplary embodiment of the present invention, the source moves along a helical path around the object of interest and the beam has one of a cone beam geometry and a fan beam geometry.

SPW  
3/2/9  
Please replace the paragraph beginning at page 2, line <sup>27</sup>~~28~~ which begins with "According to another exemplary..." with the following amended paragraph:

According to another exemplary embodiment of the present invention ~~as set forth in claim 4~~, the reconstruction of the image is performed on the basis of an iterative algorithm comprising a plurality of update steps until an end criterion has been fulfilled.

3/2/9 SPW Please replace the paragraph beginning at page 3, line <sup>4</sup>~~6~~ which begins with, "According to another exemplary..." with the following amended paragraph:

According to another exemplary embodiment of the present invention ~~as set forth in claim 5~~, the iterative algorithm is a maximum-likelihood algorithm and the reconstructed image has the highest likelihood. Furthermore, the weighing is performed in each update step of the plurality of update steps.

3/2/9 SPW Please replace the paragraph beginning at page 3, line <sup>12</sup>~~14~~ which begins with, "Another exemplary embodiment..." with the following amended paragraph:

In another ~~Another~~ exemplary embodiment of the present invention, ~~is set forth in claim 6, wherein~~ a number of detected photons during acquisition of the data set is determined and the weighing is based on a statistical error of the number of detected photons.

3/2/9 SPW Please replace the paragraph beginning at page 3, line <sup>19</sup>~~21~~ which begins with, "According to another exemplary..." with the following amended paragraph:

According to another exemplary embodiment of the present invention ~~as set forth in claim 7~~, an update of an attenuation parameter  $\mu_j^{n+1}$  is calculated from the attenuation parameter  $\mu_j^n$  by

$$\mu_j^{n+1} = \mu_j^n + \mu_j^n \frac{\sum_i l_{ij} \frac{\sum_i l_{ij} [d_i e^{-\langle l_i, \mu^n \rangle} - Y_i] / \sigma_{Y_i}^2}{\sum_i l_{ij} / \sigma_{Y_i}^2}}{\sum_i l_{ij} \langle l_i, \mu^n \rangle d_i e^{-\langle l_i, \mu^n \rangle}}$$

wherein  $d_i$  is a number of photons emitted by the source of radiation,  $l_{ij}$  is a basis function of an  $i$ -th projection,  $l_i$  is a vector of basis functions  $l_{ij}$  of the  $i$ -th projection and  $\langle l_i, \mu \rangle$  is an inner product, defined by  $\langle l_i, \mu \rangle = \sum_j l_{ij} \mu_j$ .

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3/2/9  
Please replace the paragraph beginning at page <sup>3</sup> ~~4~~, line <sup>29</sup> ~~2~~ which begins with, "According to another exemplary..." with the following amended paragraph:

According to another exemplary embodiment of the present invention ~~as set forth in claim 8~~, the reconstruction of the image is based on a sub-set of at least two projections of all acquired projections of the projection data set.

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Please replace the paragraph beginning at page 4, line <sup>5</sup> ~~8~~ which begins with, "According to another exemplary..." with the following amended paragraph:

According to another exemplary embodiment of the present invention ~~as set forth in claim 9~~, a data processing device is provided, which comprises a memory for storing a data set and a data processor for performing artifact correction in the data set of the object of interest, wherein the data processor is adapted for performing the following operation: loading the data set and reconstructing an image of the object of interest on the basis of the data set, wherein a weighing is performed during reconstruction of the image and wherein the weighing is based on statistical considerations.

spw  
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Please replace the paragraph beginning at page 4, line 19 which begins with, "According to another exemplary..." with the following amended paragraph:

According to another exemplary embodiment of the present invention ~~as set forth in claim 10~~, the reconstruction of the image is performed on the basis of an iterative algorithm comprising a plurality of update steps until an end criterion has been fulfilled, wherein the iterative algorithm is a maximum-likelihood algorithm and the reconstructed image has the highest likelihood. Furthermore, the weighing is performed in each update step of the plurality of update steps.

spw  
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Please replace the paragraph beginning at page 4, line 27 which begins with, "According to another exemplary..." with the following amended paragraph:

According to another exemplary embodiment of the present invention ~~as set forth in claim 11~~, a CT scanner system is provided, comprising a memory for storing a data set of an object of interest and a data processor for performing artifact correction in the data set of the object of interest, wherein the data processor is adapted for performing the following operation: loading the data set and reconstructing an image of the object of interest of the data set, wherein a statistical weighing is performed during reconstruction of the image.

3/2/9 spw

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Please replace the paragraph beginning at page 5, line 7 which begins with, "The present invention relates..." with the following amended paragraph:

The present invention relates also to a compute program which may, for example, be executed on a processor, such as an image processor. Such a computer program may be part of, for example, a CT scanner system. ~~The computer program, according to an exemplary embodiment of the present invention, is set forth in claim 12.~~ The computer program may be preferably loaded into working memories of data processors. The data processors are thus